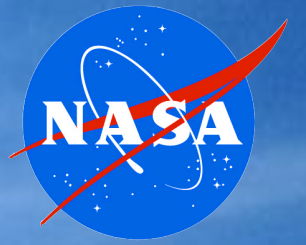


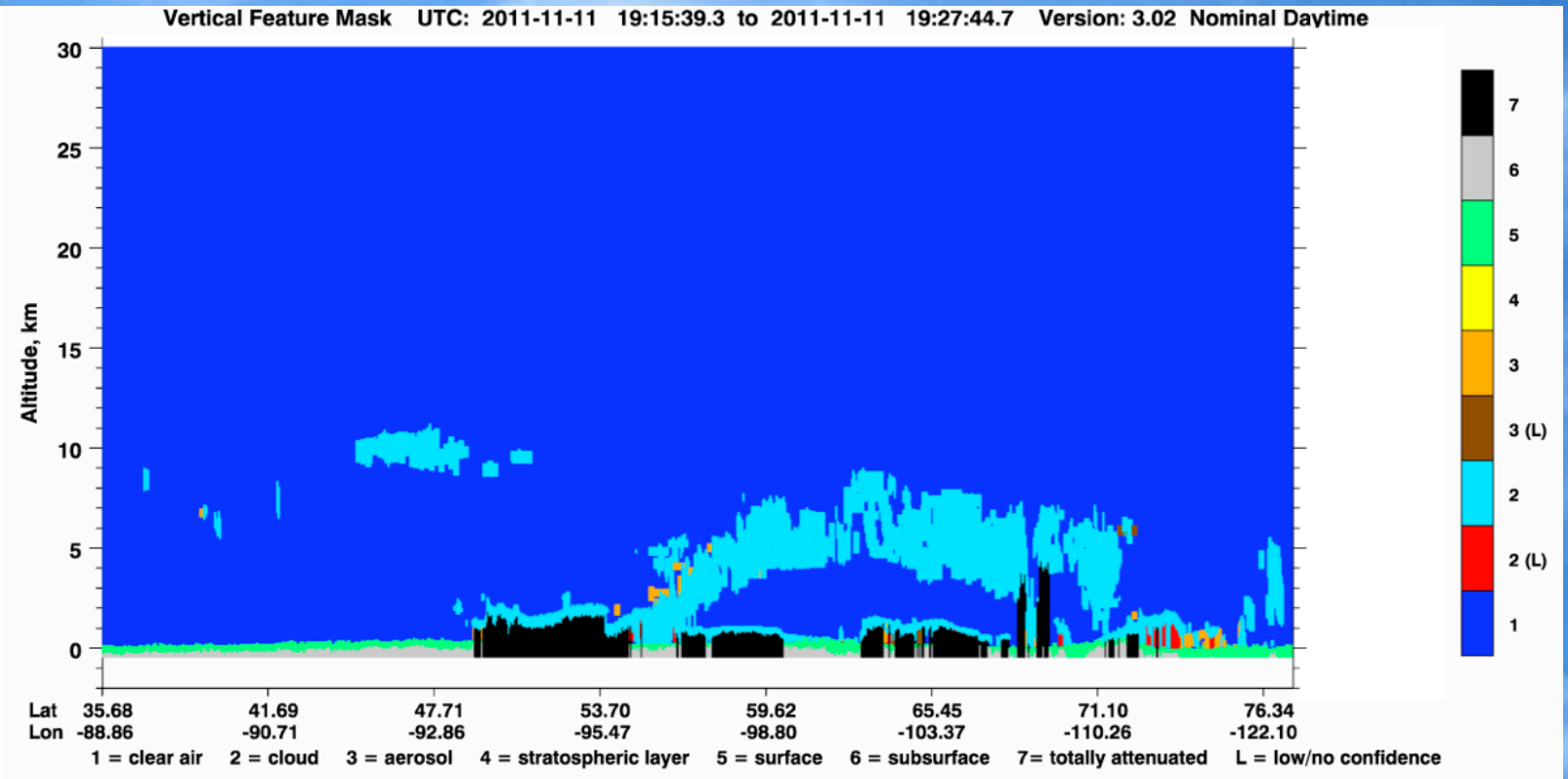
CALIPSO Data: A Tutorial

The CERES S'COOL Project

Interpreting the Image

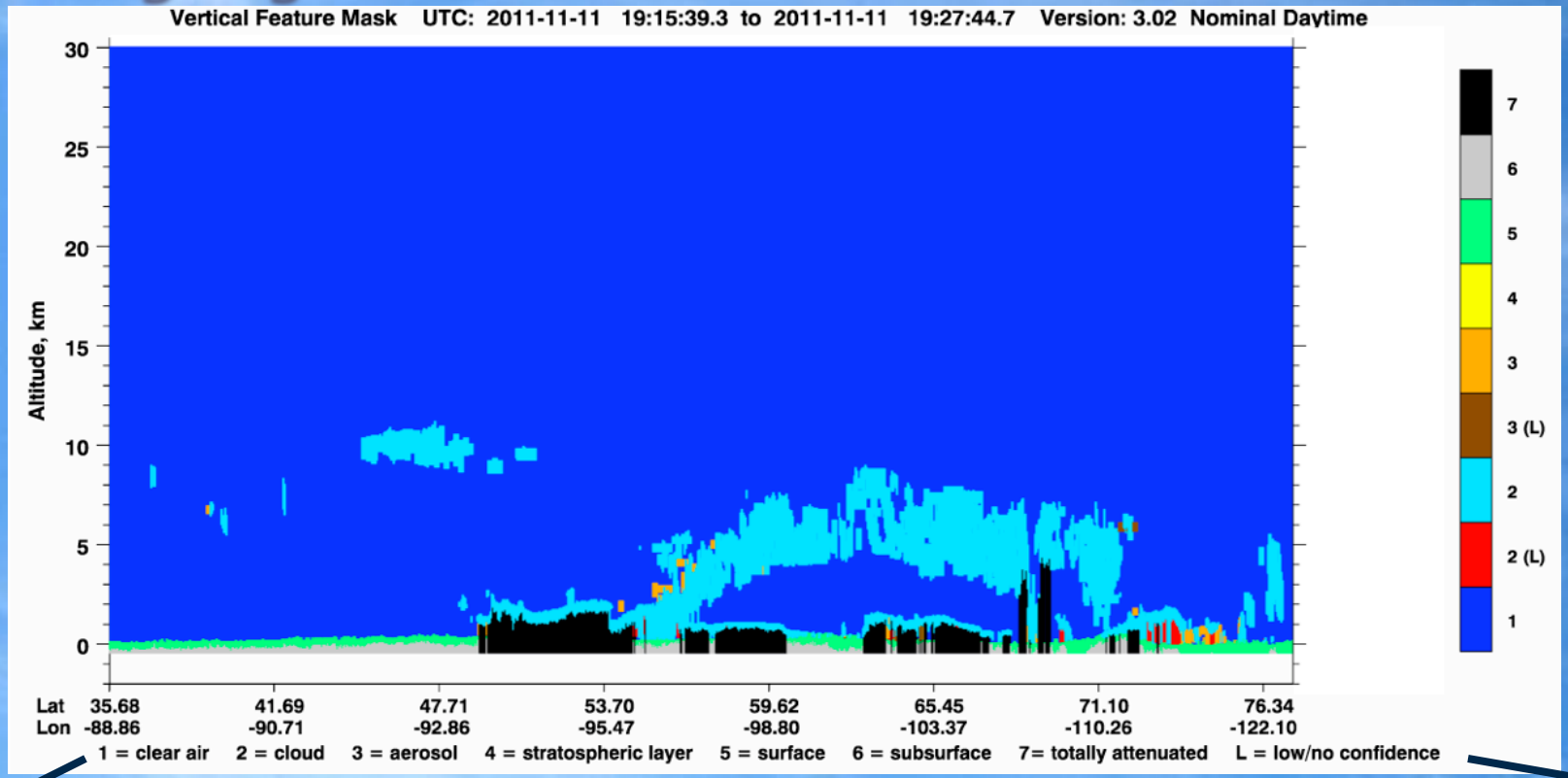
- The graphs are labeled with latitude and longitude (x-axis)
- Altitude (y axis)

x = distance along orbit track



Interpreting the Image

- Medium blue – clear sky
- Light blue – clouds
- Light green - surface

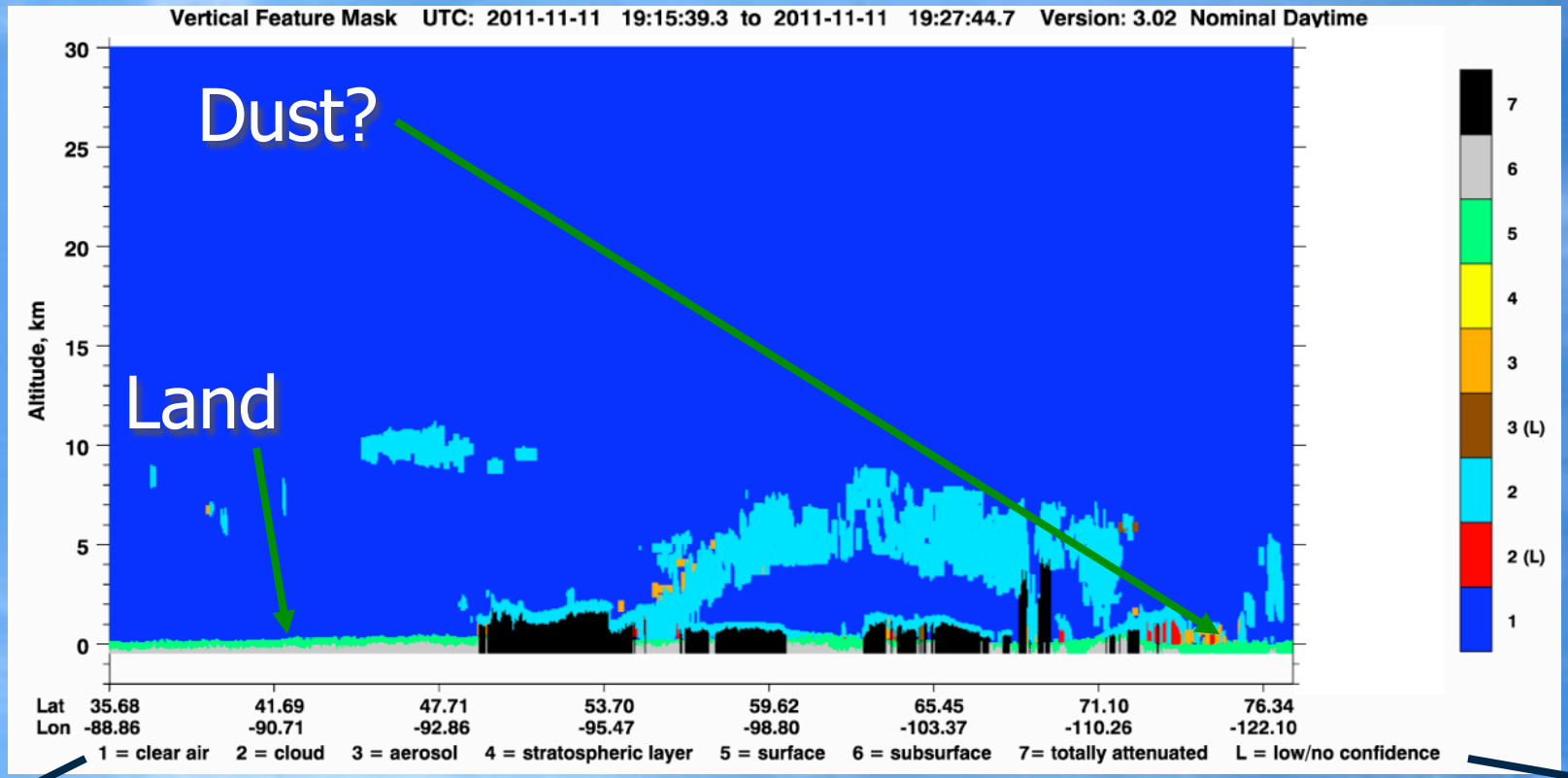


7
6
5
4
3
3 (L)
2
2 (L)
1

1 = clear air 2 = cloud 3 = aerosol 4 = stratospheric layer 5 = surface 6 = subsurface 7= totally attenuated L = low/no confidence

Interpreting the Image

- In some images, dust layers (brown) also appear

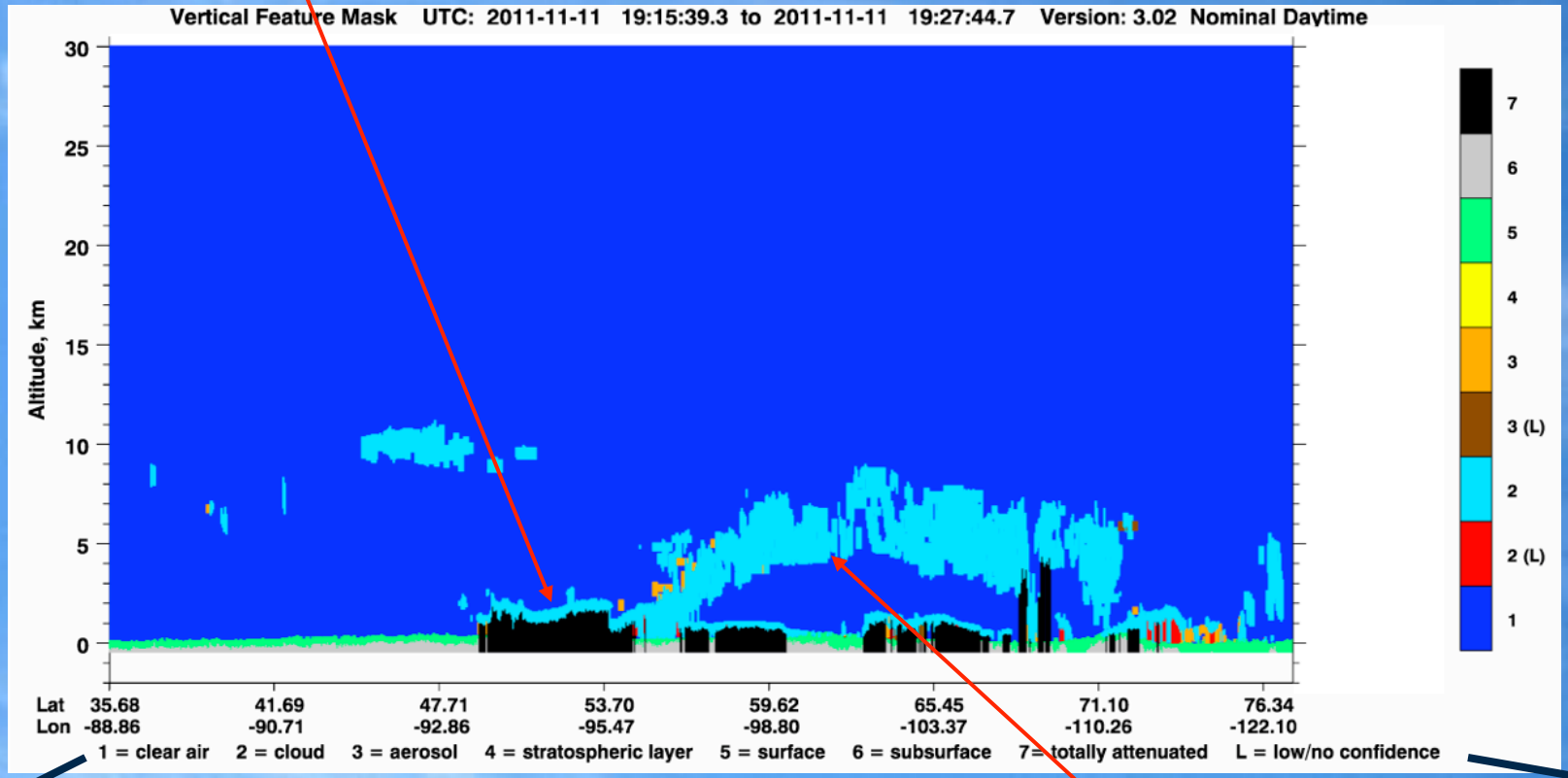


7
6
5
4
3
3 (L)
2
2 (L)
1

1 = clear air 2 = cloud 3 = aerosol 4 = stratospheric layer 5 = surface 6 = subsurface 7= totally attenuated L = low/no confidence

Interpreting the Image

Lidar cannot penetrate thick clouds (dark = no signal)

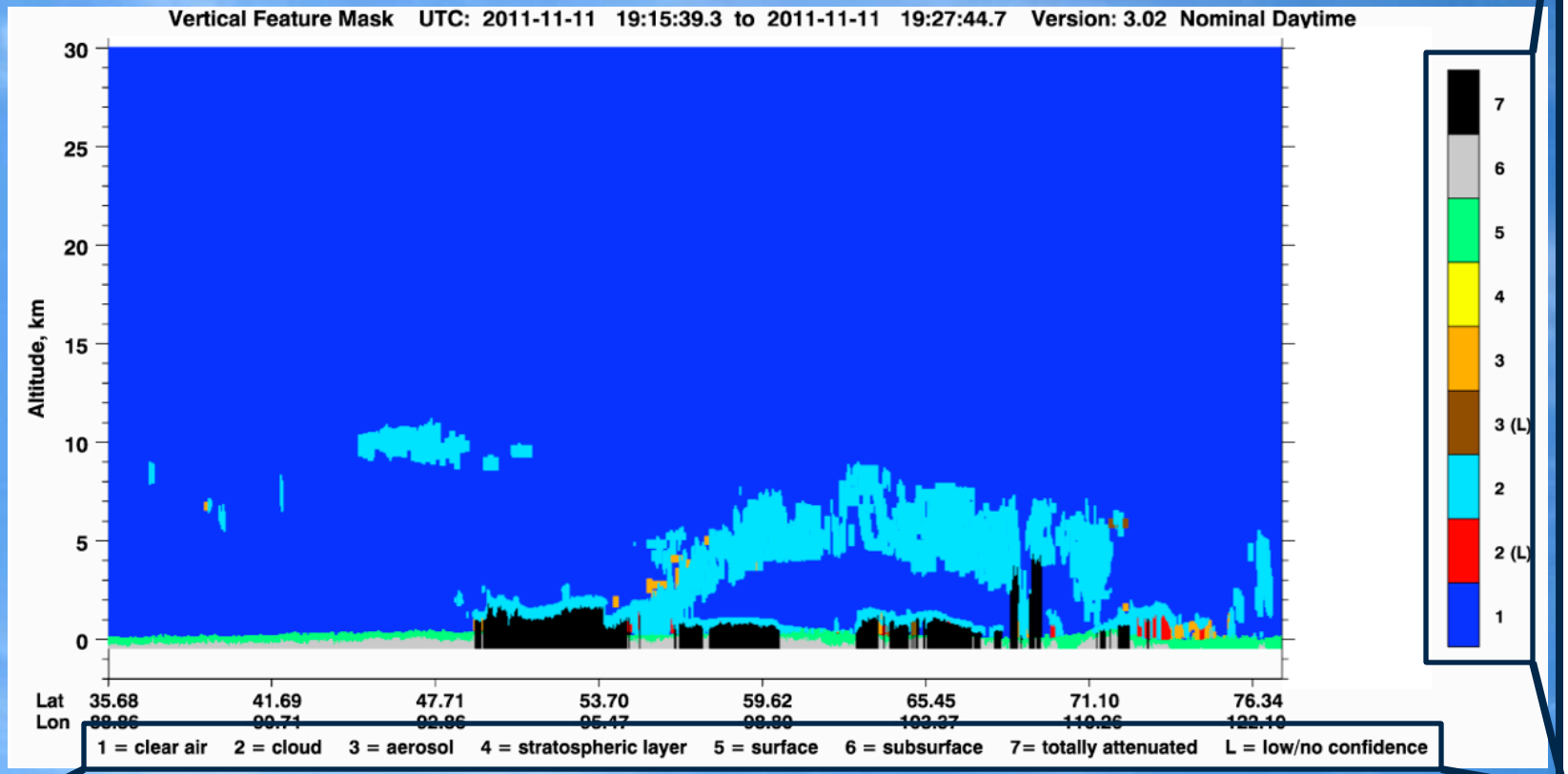


1 = clear air 2 = cloud 3 = aerosol 4 = stratospheric layer 5 = surface 6 = subsurface 7= totally attenuated L = low/no confidence

Lidar “sees through” thin clouds

Interpreting the Image

- The Vertical Feature Mask map easily helps you see the clouds and aerosols



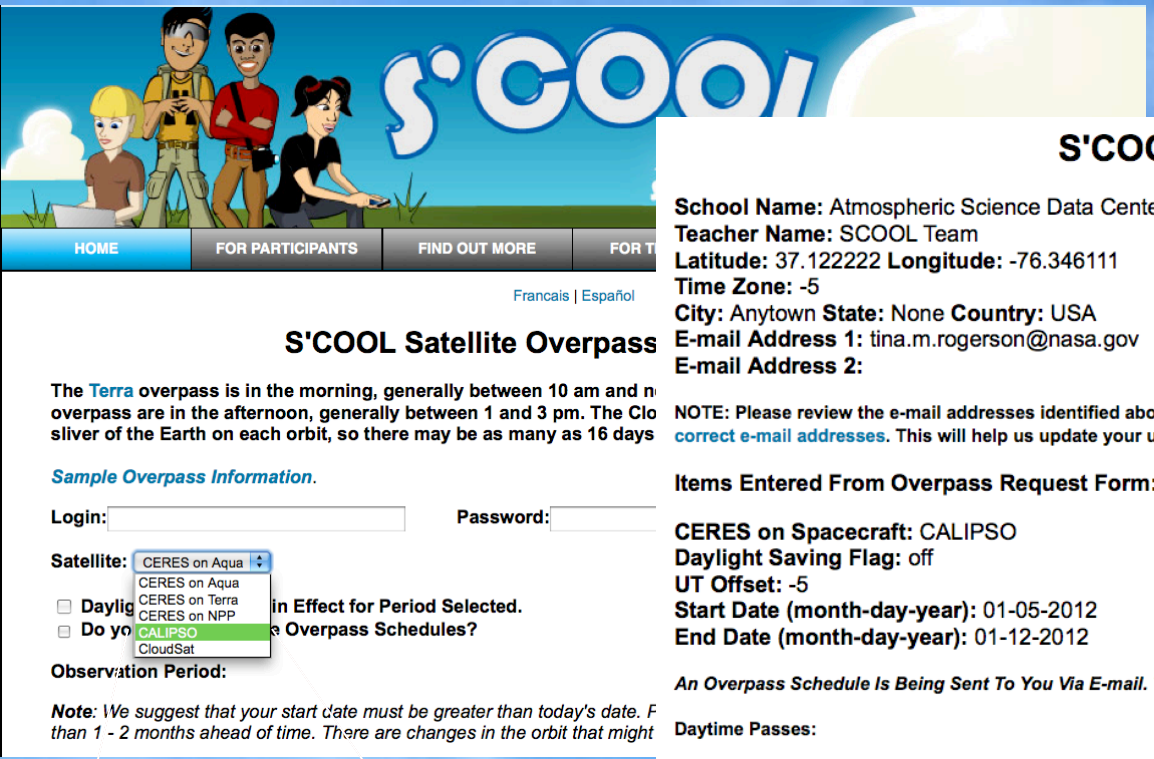
1 = clear air 2 = cloud 3 = aerosol 4 = stratospheric layer 5 = surface 6 = subsurface 7= totally attenuated L = low/no confidence

Tips

- Remember that CALIPSO only looks at a small strip of clouds directly below it, so your observations should match the best on days when the satellite passes almost directly overhead. You can determine these days from the detailed S'COOL overpass schedule you received through e-mail.

Overpass Schedule

Now you can directly request CALIPSO overpass times from the S'COOL site: http://science-edu.larc.nasa.gov/SCOOL/ForParticipants.html



CALIPSO

S'COOL Overpass Schedule

School Name: Atmospheric Science Data Center/S'COOL
Teacher Name: SCOOL Team
Latitude: 37.122222 **Longitude:** -76.346111
Time Zone: -5
City: Anytown **State:** None **Country:** USA
E-mail Address 1: tina.m.rogerson@nasa.gov
E-mail Address 2:

NOTE: Please review the e-mail addresses identified above. If the addresses are not correct, send us your old e-mail address along with the correct e-mail addresses. This will help us update your user profile information correctly. Thank You.

Items Entered From Overpass Request Form:

CERES on Spacecraft: CALIPSO
Daylight Saving Flag: off
UT Offset: -5
Start Date (month-day-year): 01-05-2012
End Date (month-day-year): 01-12-2012

An Overpass Schedule Is Being Sent To You Via E-mail. The Satellite Position Information Will Also Appear In This E-mail.

Daytime Passes:

			Local	
Month	Day	Year	Local Time	UT
01	06	2012	13:26	18:26

(UT = Universal Time)
Local Time = UT + (-5)

Exploring Further

- See the following slides if you would like to explore other CALIPSO data, beyond the specific image that corresponds to your observation.

Getting There

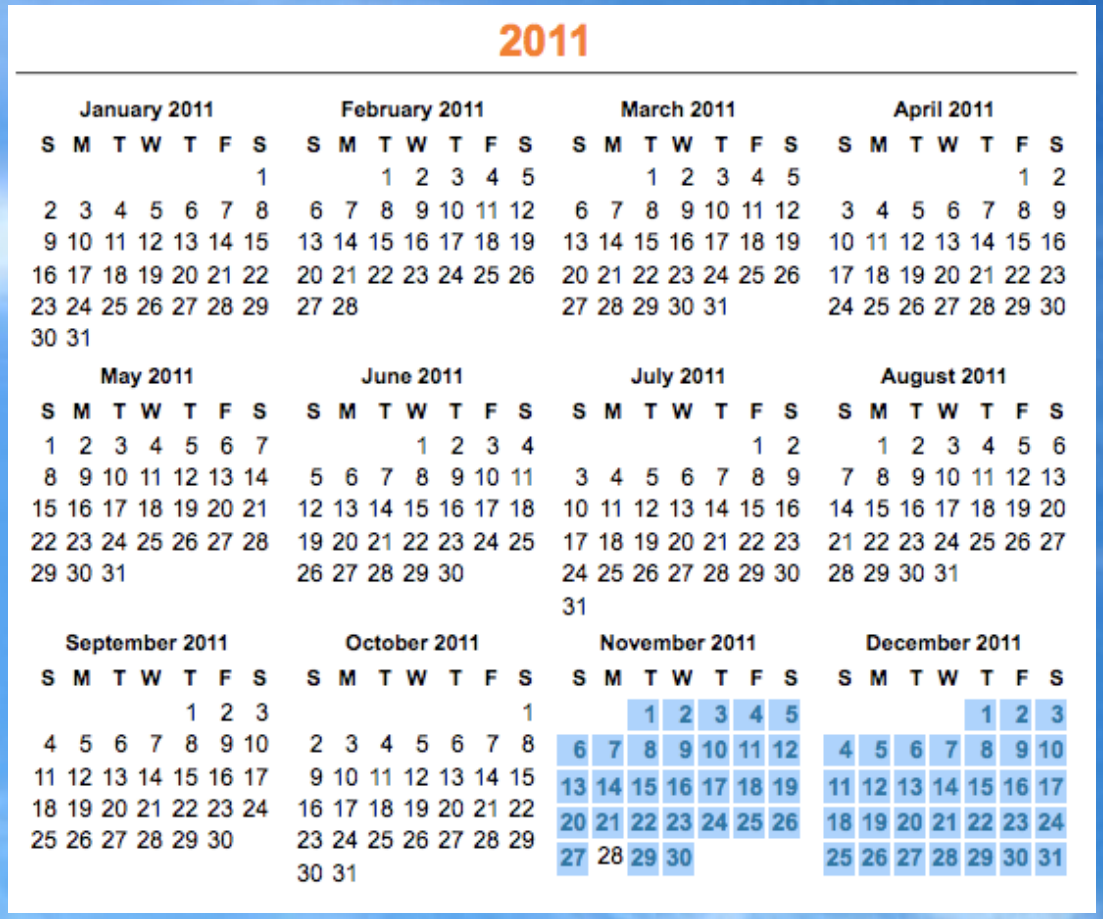
- Go to http://www-calipso.larc.nasa.gov/products/
- Click on *LIDAR Browse Images* located in the left navigation bar
- Once you land on *CALIPSO LIDAR BROWSE IMAGES (PRODUCTION)* page, scroll to the bottom to *SELECT DATA RELEASE VERSION* and click the *GO* button

Getting There

- Then scroll down to the calendar, and click on the date you need data from

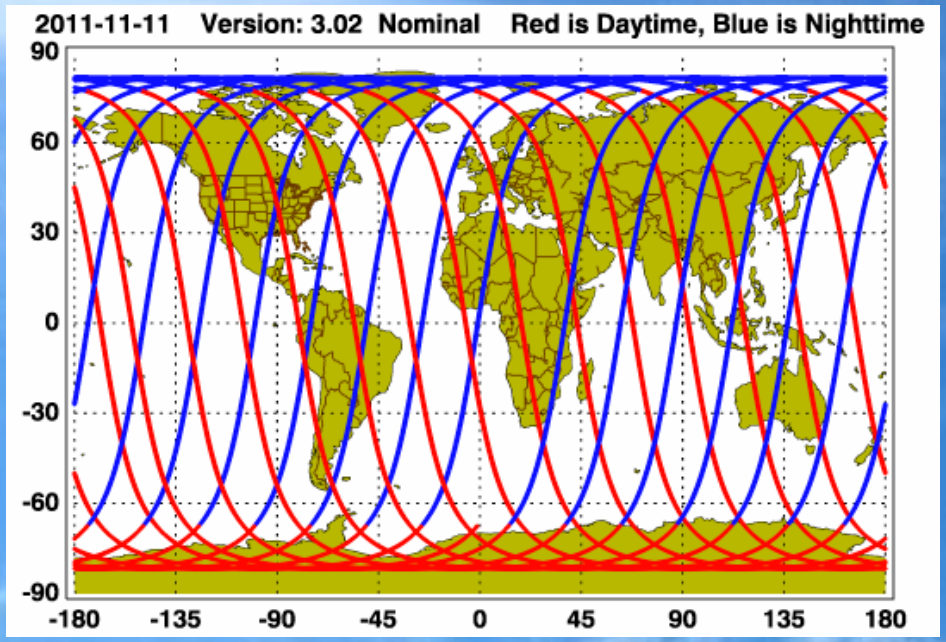
Satellite data lags ground data, so you may have to wait a couple days

Days available are highlighted in blue. If you don't see the day you want, try a different version



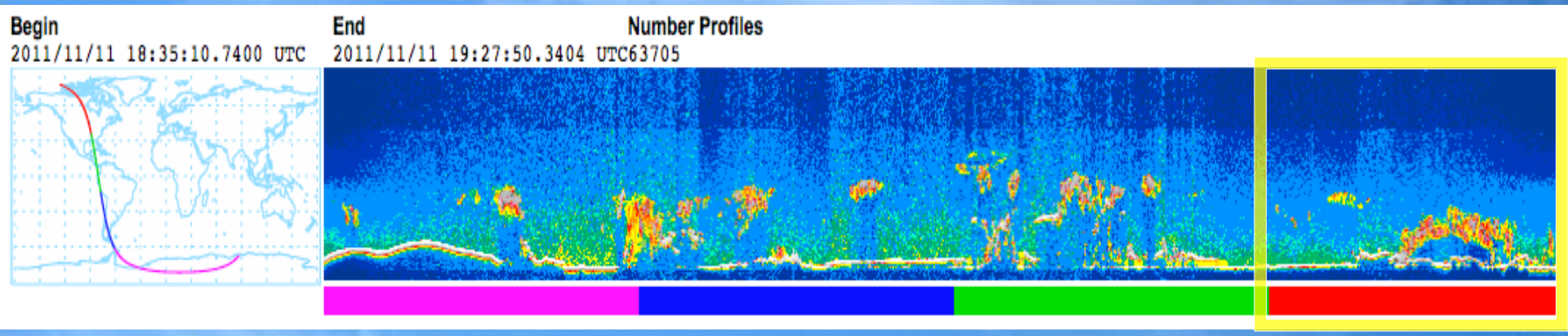
Satellite Tracks

- If you scroll down, you should see a picture of the world with many colored lines representing the path of CALIPSO
- But the tracks you actually want are further down…



Satellite Tracks

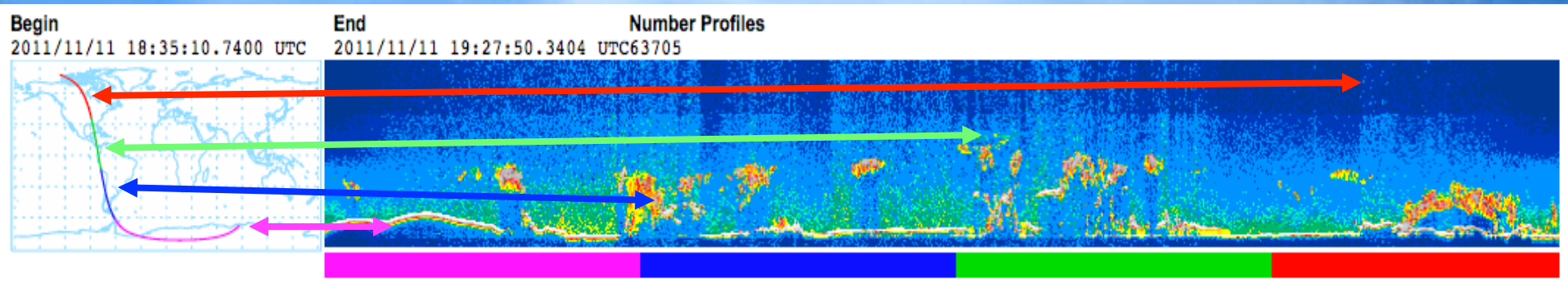
- …here, where the whole track has been divided into smaller sections (click on the specific LIDAR image above the different colors to investigate further)



- In this case, the track passes over the Midwest

Location Finding

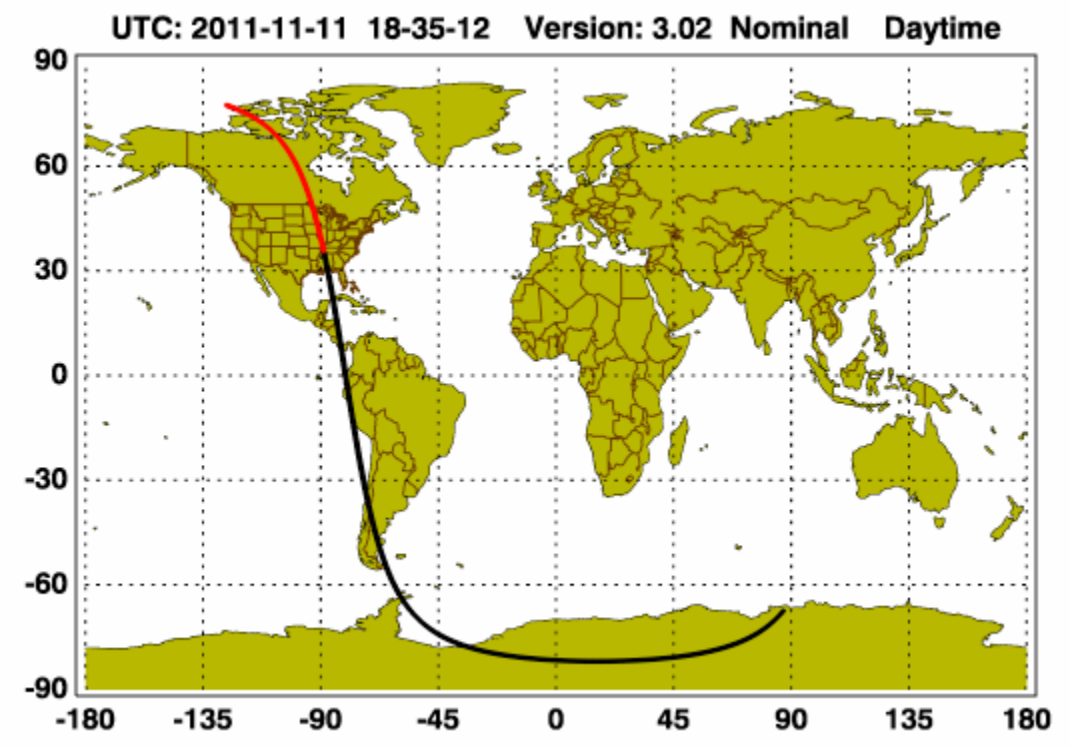
- Each differently colored part of the track corresponds to a different group of LIDAR images, as shown by the arrows



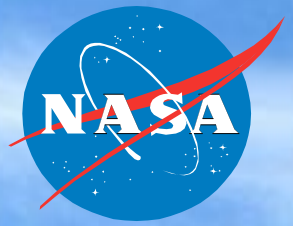
For example, only the red and a little bit of the green sections cross the Midwest

The CALIPSO orbit track

Black line: Segment of the CALIPSO orbit track
November 11th, 2011
Red segment: portion of CALIPSO orbit track we will focus on here
Begins at 18:35:12 UTC (1:35:12 pm, Eastern Standard Time in US)



x = longitude
y = latitude



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Hampton, VA 23681

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